AN INTERACTIVE TOOL FOR SEMI-AUTOMATIC CREATION OF A NATURAL LANGUAGE GRAMMAR FROM A DOMAIN MODEL

ABSTRACT

A system, method and program product for creating a grammar 100 for a natural language dialog system from a domain model. A template grammar 104 with parameterized rules to be instantiated is opened. A new grammar 102, initially empty, is created. Instances of general purpose grammar rules are created 106 and tentatively added to the new grammar. The general purpose grammar rules instances are domain objects of the new grammar, each including one or more attributes. The developer is offered the option of deciding whether to include each object 112 and which attributes 118 are kept in the new grammar. An umbrella rule is created 108 for each broad category of queries among the general purpose grammar rules. Each umbrella rule includes a domain-object-independent non-terminal in a left-hand side and a set of expansions of the non-terminal in a right-hand side. Objects are selectively included 112 as domain objects in the new grammar. Then, umbrella rules are created for domain object attributes 120 and, object attributes are selectively included 124 in the new grammar. Attributes are classified as either simple or complex 1204. Complex attributes relate one object to a subsidiary domain object. Then, a grammar checker is applied to the new grammar 200, 206 to prevent inclusion of unreachable non-terminals or non-terminating expansions in the final natural language dialog system grammar. Unreachable non-terminals may be removed or new rules may be added making them reachable at the developer's option 204. Non-terminating expansions may also be removed or appropriate rules may be added, also at the developer's option 208.